

In the Claims:

1-45. (cancelled)

46. (new) A process for reducing levels of residual diphenylmethane diisocyanate monomer from a polyurethane prepolymer product mixture resulting from reaction of a stoichiometric excess of diphenylmethane diisocyanate monomers with a polyol,

which process consists of distilling diphenylmethane diisocyanate monomer from a combination consisting essentially of

the polyurethane prepolymer product mixture

and

at least one inert solvent having a boiling point about 1°C to about 100°C below the boiling point of the diisocyanate monomer

at a pressure of 10 torr,

wherein the diphenylmethane diisocyanate monomer has a boiling point above about 200°C at 10 torr, the weight ratio of the inert solvent to the residual diphenylmethane diisocyanate monomer ranges from about 90:10 to about 10:90, and the inert solvent comprises about 5% to about 85% by weight of the total weight of the combination of the prepolymer reaction product mixture plus solvents.

47. (new) The process according to claim 46 wherein diphenylmethane diisocyanate monomer is dissolved in the inert solvent prior to reacting with the diol.

48. (new) The process according to claim 46 wherein the inert solvent is blended into a polyurethane prepolymer product mixture after the polyurethane prepolymer product mixture is made.

49. (new) The process according to claim 46 wherein the polyurethane prepolymer product mixture is prepared by reacting a stoichiometric excess of diphenylmethane diisocyanate monomer with a polyol at an NCO:OH ratio in the range of from about 2:1 to about 20:1.

50. (new) The process according to claim 46 wherein the inert solvent is selected from the group consisting of organic aromatic esters, and organic aliphatic esters, and mixtures thereof having boiling points in the range of from about 115°C to about 214°C at 10 torr.

51. (new) The process according to claim 46 wherein the distillation comprises at least three agitated film vacuum distillation stages in series, each at an evaporative temperature of up to about 150°C.

52. (new) The process according to claim 46 wherein the polyurethane prepolymer product mixture is prepared by reacting a stoichiometric excess of diphenylmethane diisocyanate monomer with a polyol comprising at least one component selected from the group consisting of a polyester of adipic acid, a polyether of ethylene oxide, a polyether of propylene oxide, a polyether of tetrahydrofuran, a polycaprolactone, a polycarbonate, a hydrocarbon polyol, and mixtures thereof; said polyol having a molecular weight in the range of from about 400 to about 5000.

53. (new) The process according to claim 46 wherein the polyurethane prepolymer product mixture is prepared by reacting a stoichiometric excess of diphenylmethane diisocyanate monomer with a polyol comprising at least one component having a low molecular weight in the range of from about 62 to about 400 selected from the group consisting of ethylene glycol, isomers of propylene glycol, isomers of butane diol, hexanediol, trimethylolpropane, pentaerythritol, poly(tetramethylene ether) glycol, diethylene glycol, triethylene glycol, dipropylene glycol, tripropylene glycol, and mixtures thereof.